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ABSTRACT

The Nairn report, The Reign of ETS, asserts that Educational Testing Service (ETS) has attempted to suppress information on the relationship of test scores to students' family income, that the relationship of Scholastic Aptitude Test (SAT) scores to income is inordinately high, and that the tests preserve the social status quo by denying opportunity to students from poor and working class families. In fact, the principal evidence reported by Nairn comes from a series of reports developed by ETS and published by the College Board. The relationship between test scores and family income is far more moderate than Nairn suggests; students from each income level obtain the full range of SAT scores. Finally, it is doubtful that the cause of social equality will be furthered by eliminating evidence of unequal educational preparation. History indicates, in fact, that admission to higher education was far more a matter of class and economic status prior to the use of national admissions tests than it has been since. (Author/BW)

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TEST SCORES AND FAMILY INCOME

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A Response to Charges in the Nader/Nairn Report on ETS

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AN OVERVIEW

TEST SCORES AND FAMILY INCOME

The Nairn report asserts that ETS has attempted to suppress information on the relationship of test scores to students' family income, that the relationship of SAT scores to income is inordinately high, and that the tests preserve the social *status quo* by denying opportunity to students from poor and working class families. Each of these assertions is fallacious.

Although Nairn accuses ETS of suppressing information on score income correlation, the principal evidence reported by Nairn on SAT scores and family income comes from a series of reports developed by ETS and published by the College Board. The Board, in fact, has been publishing statistics relating test scores to family income since 1971-72.

Moreover, the relationship between test scores and family income is far more moderate than Nairn suggests. Students from each income level obtain the full range of SAT scores. Nearly one-third of students with family income below $6,000 rank in the top half of all SAT test takers. While there is a correlation between family income and test scores, other indicators of educational achievement, including school grades, have similar relationships to students' economic backgrounds. These are reflections of a fact that, in our society, students from higher income families enjoy educational advantages that many lower income students do not.

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It is doubtful that the cause of social equality will be furthered by eliminating evidence of unequal educational preparation. Since *educational achievement* in general relates to family income, there is no evidence that use of test scores *per se* has a dramatic impact on opportunities for low-income students. Moreover, many colleges admit all applicants, and more selective schools base admissions decisions on a variety of criteria, not test scores alone. Most take into account the obstacles that disadvantaged students have had to overcome.

History indicates, in fact, that admission to higher education was far more a matter of class and economic status prior to the use of national admissions tests than it has been since. The tests provided low-income students with the opportunity to prove that they could succeed in the demanding academic programs of the most selective institutions.

Like the colleges, universities, and educational associations it serves, ETS is committed to improving access of disadvantaged students to higher education. ETS has administered for these organizations a number of talent searches, guidance programs, and financial aid programs designed to improve opportunities for disadvantaged students. ETS also conducts many research projects addressing the causes of differences in educational achievement for students from different backgrounds.

Test Scores and Family Income

AN INTRODUCTORY NOTE

In the Nader/Nairn report on ETS, several key allegations and conclusions stem from the assertion that there is an exceptionally high correlation of test scores with family income—higher, indeed, than the correlation of scores with success in school and college.

In fact, although there is a relation between scores and income, it is less than the report's data indicate and substantially less than its rhetoric implies. The strong impression conveyed—that only the children of the affluent do well on the test—flies in the face of the fact that there are, in fact, many thousands of students from middle-income and low-income families who do well on the tests—indeed, in some cases brilliantly. The premise that scores relate more closely to income than to grades is simply wrong, on the facts.

If the misrepresentations in the report dealt with matters of less vital concern to the hopes and plans of young people and their parents, they would perhaps merit little comment. Since they deal with the aspirations of students, since they convey the defeatist message that only the rich have a chance, and since they are being given wide publicity, they can work serious mischief in education and society and need to be accorded a response. This essay is intended to correct the record and place the issue in valid perspective.

William W. Turnbull
President
Educational Testing Service

TEST SCORES AND FAMILY INCOME

The Nairn report on ETS, sponsored by Ralph Nader, makes three major assertions concerning test scores and family income which require a response. Each of these assertions is a misrepresentation or distortion of the facts:

1. *Assertion:* That ETS has attempted to suppress information on the relationship of test scores to students' family incomes.

   Fact: The data from which Nairn worked is drawn from a series of reports published by the College Board since 1971-72 and distributed to over 15,000 institutions and individuals annually.

2. *Assertion:* That the relationship of SAT scores to income is inordinately high—that SAT scores and family income rank students in nearly the same way.

   Fact: While *average* scores are higher for students from families with higher incomes, students from each income level obtain the full range of SAT scores. Nearly one-third of the students with family incomes below $6,000 rank in the top half of the total group in terms of SAT scores. Other measures of educational achievement show a similar relationship to income.

3. *Assertion:* That tests are a major instrument in preserving a social *status quo*, in denying opportunity to students from poor and working class families.

   Fact: The admissions and financial aid policies and practices of colleges are designed to expand opportunities of low-income students. Use of admissions tests has also contributed to *increased* access of disadvantaged students to higher education.

Suppression of Information

In several places, Nairn implies that ETS is reluctant to publish information on the relationship of test scores to family income (e.g., p. 199), and he alludes to "suppression of the score income correlation" (p. 210). Similarly, in a footnote on page 451:

> The ranking of test-takers by income has not been a function which ETS has chosen to publicize widely. The 1979 *College Bound Seniors* report, for example, presents no score-income tables.

In fact, the principal evidence reported by Nairn on SAT scores and family income (pp. 200-203) is taken from a series of reports *(College Bound Seniors ,1973-79)* developed by ETS and published by the College Board. *College Bound Seniors* reports have been published since 1971-72, the year that the Student Descriptive Questionnaire was introduced. This questionnaire is the source of information on

family income. More than 15,000 copies of this report are distributed each year to high schools, to colleges, to the press, and to the public generally. Contrary to Nairn's statement, the 1979 *College Bound Seniors* report does include score-income data (Table 11), and figures from this table are quoted by Nairn himself on page 203 of his report. *Information on the relationship of SAT scores to students' family income has not been suppressed.*

The Relationship of SAT Scores to Income

Much of Nairn's discussion is clearly designed to leave the impression that test scores rank individuals according to their family incomes with few exceptions. In fact, the relationship is far more moderate than he suggests.

Table 1 shows average SAT scores and reported family incomes for the college bound seniors of 1973-74 for whom this information was available. The average income figures which are cited by Nairn show that there is, in fact, a relationship. Average family incomes are higher for higher-scoring students. Similarly, the average scores at the bottom of the table, ranging from 403 to 485, indicate that there is a relationship of scores to income.

The complete table shows that the relationship is far from perfect and that a ranking of students by SAT scores is not a ranking by family income.

Table 1
1973-74 College Bound Seniors Classified by SAT Average and Family Income*

SAT Average	Reported Family Income $ 0-5,999	$6,000-11,999	$12,000-17,999	$18,000 +	Average Income**
750–800	17	117	169	415	$24,124
700–749	239	1,172	1,752	3,252	$21,980
650–699	686	3,994	5,683	9,284	$21,292
600–649	1,626	9,352	12,187	17,992	$20,330
550–599	3,119	17,042	20,822	28,151	$19,481
500–549	4,983	26,132	29,751	37,400	$18,824
450–499	6,663	33,209	35,193	41,412	$18,122
400–449	8,054	34,302	33,574	37,213	$17,387
350–399	8,973	29,762	25,724	26,175	$16,182
300–349	9,622	21,342	14,867	13,896	$14,355
250–299	7,980	10,286	5,240	4,212	$11,428
200–249	1,638	1,436	521	325	$ 8,639
Total Number	53,600	188,146	185,483	219,727	
Average SAT Score	403	447	469	485	

*The total number of students in this table (646,956) is very slightly smaller than the number (647,031) included in the analyses reported in *College Bound Seniors, 1973-74*. Students in this table must have had *both* SAT verbal and SAT mathematical scores and have reported family income on the Student Descriptive Questionnaire. Students with only one SAT score were included in *College Bound Seniors*.

**From *College Bound Seniors, 1973-74*.

7

Students from each income level obtain the full range of SAT scores. Many students from the top income group ($18,000 and over) earn low scores. For example, 8% scored below 350. Many students from the low-income group (less than $6,000) earn high scores—5% scored above 600.

The correlation of test scores and reported family incomes for the nearly 650,000 students shown in the table is 0.23. Because the questionnaires in use when these data were obtained had a limited number of categories for reporting family income, it is believed that this correlation coefficient understates the true relationship. An analysis of test scores and reported family income reported on a finer scale for a more recent group found a correlation of 0.29, a figure which may also be somewhat low due to imperfections in the measurement of family income.*

What level of relationship might be expected between measures of students' educational development and their family incomes? It is well known that, in relation to students from low-income families, students from middle- and upper-class families usually have more highly educated parents, have home and community environments that provide more support for educational attainment, and attend better schools, to name only a few of the relevant factors. To deny that valid measures of educational attainment may be related to the economic circumstances of students' families is to ignore the realities of social and educational inequality.

Christopher Jencks (1972, p. 78), as cited by Nairn, estimates a correlation of about 0.35 between family economic status and scores on various elementary and secondary school standardized tests. A recent review by White (1976) found an average correlation of .25 between family socio-economic status and various indicators of educational achievement, based on 489 analyses and some 100 separate studies. The average of 41 correlations of socio-economic status and school grades was .24. When SES was defined solely in terms of family income, the average of 19 correlations between income and measures of educational achievement was .32.

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*At one point Nairn gives a figure of .40 for the SAT-income correlation, which he states (incorrectly) "is higher than the correlation which ETS claims to have found between scores and the first year grades the SAT is supposed to predict" (p. 203). He does not indicate that this estimate, which he attributes to Doermann (1968), was based on research using other tests, not the SAT. Nor does Nairn quote the following from Doermann (p. 152): "In the present study an initial selection of 0.4 was made from among the plausible range of choices suggested by the literature previously noted. While chosen as a best estimate, it also seemed to be a conservative choice for the purposes of this study: that is, of the most plausible choices *it was the highest one*." (Emphasis added.)

The typical correlation of SAT scores with college grades (GPA) within colleges conducting validity studies is .41. This correlation is not directly comparable to the SAT/income correlation of .29 cited above, since the SAT/GPA correlations are computed on selected groups of admitted and enrolled students. The typical correlation of SAT scores and income for these restricted groups is much smaller than the value of .29 found for an unrestricted sample of SAT takers.

The correlation found between SAT scores and income (of about .30) is quite consistent with more general research findings on the relationship of educational achievement to family circumstances and with the everyday experience of teachers in schools and colleges. The fact that we are not now all equal in educational development and achievement should not be obscured by heated charges of test bias and discrimination.

Tests and the Status Quo

A careful reading of Nairn's text and notes indicates that he does not in fact challenge the reality of the relationship of students' family incomes and educational achievement. His fundamental thesis is that use of the tests, which help to disclose the effects of unequal resources and prior learning opportunities on the education of children of different classes, should be terminated or, at the least, modified.

> In terms of action it should be remembered that many aspects of class discrimination will only change when the fundamental rules of the current economic system change. But the use of ETS aptitude scores to influence advancement, while rooted in the economic system . . . has its impact on people's lives through a practice which is more immediate, specific, and subject to rapid change. . . The effects of a change in the test system on class opportunities could be considerable. (p. 454)

Even if there were agreement that the best approach to expanding access to higher education is to eliminate evidence of unequal educational preparation, it is doubtful that the course of action advocated by Nairn would have the effects he predicts.

First, the relationship of SAT scores to family income is more modest than the statement implies and is not peculiar to the SAT. Table 1 indicates that about 32% of the students with family incomes below $6,000 rank in the top half of the total group in terms of SAT scores (above about 450). Other similarly reliable and consistent measures of educational achievement would show a similar pattern. There is no evidence that use of test scores *per se* has a dramatic impact on opportunities for low-income students.

Second, admissions does not occur in the way Nairn suggests. Many colleges are not selective and admit nearly all applicants. Those colleges that are selective base admissions decisions on many different kinds of information, not test scores alone. In many cases, these colleges take into account the obstacles that disadvantaged students have overcome in reaching their present levels of achievement. Indeed, they seek out and provide financial aid and other kinds of assistance to such students. The image in the Nairn report of a system of admissions based on test scores that is

designed to discriminate unfairly against low-income students is remarkably at variance with a lot of well-known facts.

Third, history indicates that selective admissions to higher education was far more a matter of class and economic status prior to the use of national admissions tests than it has been since. In the absence of a uniform and dependable indicator of students' abilities, admissions officers at selective institutions gave far more weight to grades and recommendations for students from a select group of well-known schools. The introduction of tests resulted in a substantial increase in opportunities for educational advancement of low-income students by providing a credible demonstration that many such students from schools without reputations for educational excellence could succeed in the demanding academic programs of the most selective institutions. Before rushing into radical surgery of the current system of admissions tests, we should carefully consider whether alternative systems would serve widely held social values as well.

As suggested above, admissions programs in selective colleges, and in many graduate and professional schools, are based on a balancing of values. These institutions place importance not only on achievement, accomplishment, demonstrated ability, and special talents, but also on more elusive personal qualities such as creativity and motivation. In their admissions procedures, many of these institutions also seek to redress effects of past inequality and to admit groups of students that are diverse in terms of geography, family economic background, race, and other characteristics. They do so not only to serve egalitarian principles, but also to accomplish their own educational objectives. When the *Bakke* case was before the Supreme Court, colleges and universities strongly defended their use of these kinds of criteria on social and educational grounds.

ETS and the educational associations that sponsor the admissions testing programs administered by ETS have also demonstrated in many ways their commitment to improving access of disadvantaged students to higher education. Very little attention is given in the Nairn report to the role of the College Board in advancing and developing through its College Scholarship Service (CSS) the concept of awarding financial aid based on need—historically one of the most important influences on expanded access to college for low-income students. Like CSS, a similar financial aid need analysis program at the graduate and professional school level, administered by ETS, is largely ignored in the Nairn report. Overlooked entirely are a host of talent search, guidance, scholarship, and demonstration projects designed to improve opportunities for disadvantaged and minority students—projects carried out by ETS on behalf of the test program sponsors or other organizations.

ETS is also committed in its research program to addressing root

causes of differences in educational achievement for the poor and rich—differences that create the need for later programs of compensatory and affirmative action. Prominent on a long list of such research activities are a five-year study of effective compensatory reading programs in grades 2, 4, and 6 (sponsored by the U.S. Office of Education); a major longitudinal study of disadvantaged children and their first school experiences (sponsored by the Office of Child Development, Department of Health, Education, and Welfare); studies of exemplary school desegregation practices; and evaluation studies of the effects of educational programs on the skills and achievement of disadvantaged children, such as the *Sesame Street* evaluation (conducted for the Children's Television Workshop) and a number of local evaluations of compensatory education projects. This side of ETS is also given virtually no attention in Nairn's study.

Despite his slogan—that tests reflect "class in the guise of merit" —Nairn himself seems to recognize in his main argument the well-documented fact that *educational achievement* in general has a relationship to the economic background of students. Though this relationship is moderate, educational inequality is real. The failure of society to provide the best education possible to all its citizens has an impact on the capacity of individuals to lead satisfying and productive lives. This reality presents a challenge to society as a whole.

Nairn's proposal to eliminate evidence of inequality, before "constructing a society with a new definition of economic justice" (p. 454), is one that has its advocates. But, there are many who favor a more balanced response to this challenge—*first*, seeking through broadly based efforts to reduce real inequality in children's educational achievement; and *second*, recognizing within systems of advancement *both* the values of educational achievement and accomplishment *and* the need to expand access of all groups in the society to educational and occupational opportunities.

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